Application of the VASE Methodology and Process for the NCMS Environmental Stress Screening (ESS) 2000 Project

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This paper discusses the applicat ion and results of the Value Added Screening Effectiveness (VASE) methodology and process on the National Center for Manufacturing Sciences (NCMS) ESS 2000 project, The VASE process was used as the "engine" to determine the effectiveness of the various screening options under consideration in the NCMS ESS 2000 project. VASE was selected because it enables objective assessments to be made of the effectiveness of traditional ESS and leading edge alternative ESS. Application of the VASE process enables optimization trade-offs among various design and verification activities as well as optimization of individual activities. This general application of the VASE process should lead to globall y optimized solutions, thereb y maxi mizing an organization's profit potential.

VASE is a methodology/process for organizing process data to yield metrics regarding the overall cost effectiveness of a process or a set of processes. Specifically, VASE organizes data by failure mode/mechanism and screening parameter to enable the determination of the effectiveness of a given set of stresses (or a single stress parameter) in detecting a given failure mode and the number of those failure modes present in a design.

Application of the VASE methodology and process to the NCMS ESS 2000 project demonstrated the methodology and identified an opportunity to cut test cost by a factor of 2 without impacting post ESS yields, thereby resulting in significant savings for an organization.

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